

What drives you, drives us.

Technology from Bosch is used in practically every vehicle in the world. For us, the focus is on people and on helping them to stay mobile.

We have been dedicated to people for more than 125 years with our pioneering spirit, research, production and expertise.

Our dedication is an unwavering commitment to providing them with a unique combination of parts, diagnostics, workshop equipment and services:

- ▶ state-of-the-art solutions for efficient vehicle repairs
- ▶ innovative workshop equipment and software – also available on favorable lease terms
- ▶ the world's largest range of new and remanufactured spare parts
- ▶ fast, reliable delivery service
- ▶ expert customer care via hotline
- ▶ extensive range of training courses
- ▶ specific sales and marketing support
- ▶ plus many other services



Bosch products and services

- ▶ Diagnostics
- ▶ Diesel systems
- ▶ Gasoline systems
- ▶ Brake systems
- ▶ Spark plugs
- ▶ Energy systems
- ▶ Batteries
- ▶ Filters
- ▶ Wiper systems
- ▶ Light technology
- ▶ Comfort electronics
- ▶ Hybrid/e-mobility
- ▶ Technical hotline
- ▶ Knowledge database
- ▶ Service training
- ▶ Workshop concepts



You can get original Bosch quality here:

Subject to technical and program changes.

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The new Bosch packaging design

- ▶ Sales-boosting, appealing design
- ▶ Multi-line concept for different specifications for a targeted customer approach
- ▶ Unmistakable hallmark of premium Bosch quality, worldwide

Mobile performance: Leisure and off-highway batteries from Bosch

For more information visit:
www.bosch.com



Mobile performance:

Overview of Bosch batteries

Owners of campers, mobile homes and boats appreciate their independence and the proximity to nature. At the same time, they demand comfort and safety: electrical consumers such as the air conditioner have to be supplied reliably. Golf carts, lawn mowers and other mobile devices need large amounts of energy over a longer period of time while having to be recharged quickly. Bosch batteries are perfectly adapted to these specific requirements. They stand out for their high capacity, their outstanding deep-cycle resistance as well as top safety and operational reliability.

L5
For mobile applications with several electrical consumers having to be supplied with energy over a longer period of time.
► **Pages 6, 7**



L5 G
Specifically for golf carts as well as for mobile and industrial applications requiring energy over a longer period of time and having to be recharged quickly.
► **Pages 8, 9**







L4
For mobile applications with few electrical consumers – also applicable as starter battery.
► **Page 10**



M4
Reliable starting power for lawn mowers, snowmobiles, jetskis, ATV quads and two-wheelers.
► **Page 11**



Line	SLI ⁽¹⁾			
Battery	L5	L5 G	L4	M4
Technology	PowerFrame® ⁽²⁾ , Labyrinth lid ⁽³⁾ , Deep Cycle ⁽⁴⁾	Deep Cycle ⁽⁴⁾	PowerFrame® ⁽²⁾ Labyrinth lid ⁽³⁾	
Application characteristics	Campers, mobile homes, electric boats and motorboats 	Golf carts, mobile and industrial applications 	Boats, mobile homes and golf caddies 	Lawn mowers, snowmobiles, jetskis, ATV quads and two-wheelers 
Maintenance	Absolutely maintenance-free	Maintenance-free	Absolutely maintenance-free	Supplied with acid pack and filling aid, maintenance-free, topping-up with water is possible
Installation inside the vehicle	Yes	No	Yes	No
Cold start performance	●	●	● ●	● ●
Number of electrical consumers	● ● ●	● ●	●	●
Deep-cycle resistance	● ● ●	● ● ●	● ●	●
Suitability as supply battery	● ● ●	● ●	● ●	●
Vibration resistance	●	● ●	●	●
Installation angle	Up to 45°	0°	Up to 45°	0°

(1) SLI: Starting-Lighting-Ignition battery
(2) PowerFrame®: patented stamping process for optimum current flow, reduced corrosion and a long service life
(3) Labyrinth lid: returns condensed water to the battery; integrated central degassing, backfire protection and an additional sealing ring ensure high operational safety
(4) Deep Cycle: high deep-cycle resistance and power density



Mobile performance:

Overview of OPTIMA® batteries

In marine and industrial applications, conventional starter batteries are stretched to their limits. OPTIMA® batteries are the first choice for applications demanding a consistent energy supply over a longer period of time. Their AGM (Absorbent Glass Mat) technology ensures decisively superior performance. Yet another advantage, particularly for professional off-highway applications: using the robust SpiralCell® design, OPTIMA® batteries are extremely vibration-resistant and reliable.

OPTIMA® BlueTop®
Ideal for marine applications –
copes with extended operating
times and a large number of
charge cycles.
► **Pages 12, 13**






OPTIMA® YellowTop®
Ideal for industrial applications –
high power density and deep-
cycle resistance.
► **Pages 12, 13**



OPTIMA® RedTop®
Ideal for starter applications –
top ignition power ensures
reliable engine start.
► **Pages 12, 13**



Line	SpiralCell® ⁽¹⁾		
Battery	OPTIMA® BlueTop®	OPTIMA® YellowTop®	OPTIMA® RedTop®
Technology	AGM – Absorbent Glass Mat ⁽²⁾ SpiralCell® ⁽¹⁾	AGM – Absorbent Glass Mat ⁽²⁾ SpiralCell® ⁽¹⁾	AGM – Absorbent Glass Mat ⁽²⁾ SpiralCell® ⁽¹⁾
Application characteristics	Marine applications such as boats and mobile homes with several electrical consumers 	Industrial applications and professional off-highway applications, mobile homes with several electrical consumers 	Commercial and off-road vehicles, construction and agricultural machinery, rescue and emergency vehicles, generators and trolley cars 
Maintenance	Absolutely maintenance-free	Absolutely maintenance-free	Absolutely maintenance-free
Installation inside the vehicle	Yes	Yes	Yes
Cold start performance	● ●	● ●	● ● ●
Number of electrical consumers	● ●	● ● ●	● ●
Deep-cycle resistance	● ●	● ● ●	● ●
Suitability as supply battery	● ●	● ● ●	● ●
Vibration resistance	● ● ●	● ● ●	● ● ●
Installation angle	Up to 90°	Up to 90°	Up to 90°

(1) SpiralCell®: extremely vibration-resistant and suitable for marine applications thanks to stable construction with spiral technology
(2) AGM (Absorbent Glass Mat): acid absorbed by micro-fiberglass mats allows higher amounts of energy to pass through



L5 with PowerFrame® technology:

Reliably mobile with high performance



PowerFrame® technology

Set of plates with particularly robust connection
The central arrangement of the connectors between positive and negative plates ensures additional stability.

Labyrinth lid for high operational safety
The double lid with labyrinth design ensures that evaporated liquid remains inside the battery. This makes the L5 battery absolutely maintenance-free and leak-proof.

Terminal covers
Provide protection against short circuits.

Ergonomic handles
For easy transport and installation.

Ion-permeable pocket separator
Prevents contact between positive and negative plate – for longer service life and higher starting power.

► **Patented PowerFrame® (grid) for optimum current flow and reduced corrosion**
The flow-optimized grid design of the PowerFrame® guarantees consistently high starting power and a long service life. In addition, a special alloy ensures high corrosion resistance and a significantly lower self-discharge.

Universal adapter bottom rail with high degree of vehicle compatibility
For safe, precisely fitting installation. Reduced type variations simplify the stockkeeping.

L5 is the ideal battery for mobile applications with several electrical consumers, which have to be supplied with energy over longer periods of time. It is thus used for campers, mobile homes, electric boats and motorboats.

Powerful and comfortable on the go
The long service life and optimum starting power of the L5 battery are ensured by the flow-optimized and corrosion-resistant PowerFrame® (grid).

In addition, the battery copes with long discharging periods thanks to its Deep Cycle technology. This makes it the ideal battery for seasonal applications – thanks to minimum self-discharge rates.



- Advantages of the Bosch L5 battery with PowerFrame® technology**
- Optimum starting power and a long service life
 - Twice as many charge/discharge cycles as conventional batteries
 - Absolutely maintenance-free

- Leak-proof and tilt-proof up to 45°
- Ideal for mobile applications thanks to its high charge acceptance and minimum self-discharge rates
- High safety thanks to its backfire protection and the labyrinth lid returning condensed water to the battery

Typical consumers in mobile homes:

- | | |
|-----------------------------|---------------------------|
| 1 Air conditioner | 7 Hi-fi equipment |
| 2 Pumps | 8 Converters |
| 3 Water boiler | 9 Lighting |
| 4 Coffee machine | 10 Refrigerator / freezer |
| 5 Sat/TV systems | 11 Satellite dish |
| 6 Microwave / electric oven | |



L5 G:

Quick charging and yet enduringly powerful



The Bosch L5 G battery is a clever solution for golf carts as well as for mobile and industrial applications, which require energy over a longer period of time and have to be recharged quickly.

Top endurance and quick operational readiness

L5 G is a powerful supply battery which allows deep discharging and stays operational over long periods of time.

The high deep-cycle resistance of the L5 G battery is ensured by its Deep Cycle technology with active plate material featuring a higher density than in the case of conventional starter batteries. This allows more charge/discharge cycles – without using up active material or losing battery capacity.



Advantages of the Bosch L5 G battery

- ▶ Particularly high reserve capacity, charge acceptance and long overall service life
- ▶ More than 700 cycles at a depth of discharge of 80 %
- ▶ 6 and 8 V versions of the L5 G for increased time frames between recharging processes
- ▶ Copes with heavy strains caused by frequent discharging/charging and vibrations
- ▶ Maintenance made easy – covers open all vents with just a single turn

L5 G: Powerful and versatile applications

Whether golf cart, fork lift or automotive lifts, the L5 G is the ideal solution for a large variety of applications. It stands out for its high reliability and operational readiness.



L4 with PowerFrame® technology: High endurance, short charge times



The Bosch L4 battery with PowerFrame® technology combines reliable power supply over long periods of time with quick recharging. Consequently, it suits mobile applications with few electrical consumers and can also be used as a starter battery.

L4 battery with PowerFrame® and labyrinth lid

Bosch L4 batteries are specifically designed for extended discharge cycles. Nonetheless, they are completely recharged within a short amount of time.

Advantages of the Bosch L4 battery with PowerFrame® technology

- High deep-cycle resistance – 200 charge/discharge cycles with a 50% depth of discharge
- Short charge times and a long service life
- Leak-proof up to an angle of 45°
- Absolutely maintenance-free in accordance with EN
- Suitable as starter and supply battery



M4: Reliable starting



The M4 battery impresses with reliable starting power. The technical basis for this performance is provided by a perfectly matched plate construction, an innovative grid design and a special separator. It is customized to meet the special requirements of lawn mowers, snowmobiles, jetskis and ATV quads.

Full power and go

The grid design of the M4 battery guarantees optimum conductivity and high resistance to vibrations. With a total of 42 different 6 and 12 V models, the M4 is suitable for almost all two-wheelers. In addition, it is also used for lawn mowers, snowmobiles, jetskis and ATV quads.

Advantages of the Bosch M4 battery

- Long service life even under harsh conditions
- Reliable start in any weather
- Resilient due to robust special construction
- Maintenance-free – topping up with water is possible
- Comes with acid pack and filling aid



OPTIMA® with AGM and SpiralCell® technology: Extremely vibration-resistant and reliable



AGM and SpiralCell® technology



OPTIMA® batteries ensure a consistent power supply – even over longer periods of time. They are extremely vibration-resistant and reliable, which makes them particularly suitable for marine applications.

OPTIMA® BlueTop®

For marine applications with long operating periods and multiple charge cycles. Ideal e.g. for boats and mobile homes with several electrical consumers.



OPTIMA® YellowTop®

High power density and deep-cycle resistance. Ideal for industrial applications.



OPTIMA® RedTop®

Top ignition power and safe engine starts. Ideal for commercial, off-road and construction vehicles.



Advantages of OPTIMA® batteries with AGM and SpiralCell® technology

- Consistent energy supply and high deep-cycle resistance – 300 to 400 discharge cycles at a 60% depth of discharge
- Robust special cell design for high vibration resistance and a long service life

- Short charge times
- Absolutely maintenance-free and leak-proof up to an angle of 90°
- Suitable for charging with off-the-shelf battery chargers with IU curve



OPTIMA® BlueTop® for marine applications



OPTIMA® YellowTop® for industrial applications



OPTIMA® RedTop® for off-road and commercial vehicles

Parts, bytes and services from Bosch:

Top performance from a single source

Complete support for your battery business

Benefit from Bosch parts, bytes and services:

- Complete range of batteries
- Efficient diagnostic equipment
- Reliable services



Parts



- Complete range of batteries for cars, commercial vehicles and two-wheelers, as well as for leisure and off-highway applications
- Groundbreaking cutting-edge technologies
- First-class quality and reliability
- Extensive system expertise and wide range of products

Services



- Training sessions and workshops
- Training and product videos



- Bosch Battery Collection System for economical, safe and environmentally friendly battery recycling
- Total Cost of Ownership (TCO) model for commercial-vehicle batteries

Bytes



- Professional battery chargers
- KTS diagnostic and BAT battery tester for battery replacement
- ESI[tronic] diagnostic software with detailed, vehicle-specific service and repair instructions, system information and spare-part catalogs for all vehicles

The top-sellers from Bosch:

Technical data and order numbers

L5 batteries with PowerFrame® technology

Bosch TTN	ETN	Short code	Power		Technical details				Dimensions in mm	
			Ah	Reserve*	A(EN)	Circuit	No. of terminals	Fixture	L x W x H	
0 092 L50 080	930 075 065	L5 008	75	141	650	0	1	B13	278 x 175 x 190	
0 092 L50 130	930 090 080	L5 013	90	174	174	0	1	B13	353 x 175 x 190	
0 092 L50 800	930 230 115	L5 080	230	499	1150	3	1	B00	518 x 276 x 242	

L5 G batteries

Bosch TTN	ETN	Short code	Power		Technical details				Dimensions in mm	
			Ah	Reserve*	Circuit	No. of terminals	Fixture	L x W x H		
0 092 L50 G20	300 216 000	L5 0G2	216	445	0	UTL	B00	260,4 x 181 x 282,6		
0 092 L50 G30	300 232 000	L5 0G3	232	475	0	UTL	B00	260,4 x 181 x 282,6		

L4 batteries with PowerFrame® technology

Bosch TTN	ETN	Short code	Power		Technical details				Dimensions in mm	
			Ah	Reserve*	Circuit	No. of terminals	Fixture	L x W x H		
0 092 L40 270	812 071 000	L4 027	75	124	600	1	1	260 x 175 x 225		
0 092 L40 330	811 053 075	L4 033	105	190	750	9	1	330 x 175 x 240		

M4 batteries

Bosch TTN	ETN	Short code	Power		Technical details			Dimensions in mm	
			Ah	A(EN)	Type of terminal	JIS	L x W x H		
0 092 M4F 170	504 011 002	M4 F17	4	50	YS	YB4L-B	121 x 71 x 93		
0 092 M4F 250	509 014 008	M4 F25	9	85	YS	12N9-4B-1 YB9-B	136 x 76 x 139		

OPTIMA® batteries with AGM and SpiralCell® technology

Bosch TTN	ETN	Short code	Power		Dimensions in mm				
			Ah	Reserve*	A(EN)	L	W	x	H
0 098 001 287	801 287 000	RT C 4.2	50	100	815	254	175	x	200
0 098 002 250	802 250 000	RT S 4.2	50	100	815	254	175	x	200
0 098 051 187	851 187 000	YT S 5.5	75	155	975	325	165	x	238
0 098 012 254	812 254 000	YT S 4.2	55	120	765	254	175	x	200

